

Metasys® CCT Bluetooth® Technology Communication Commissioning Guide

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Document Introduction

This document describes how to install the supported Bluetooth® wireless adapters and commission your Controller Configuration Tool (CCT) to communicate with the Bluetooth Wireless Commissioning Converter (BTCVT).


 **Note:** In other documentation, the Bluetooth Commissioning Converter may be referred to as the Wireless Commissioning Converter.

The procedure described in this document allows your computer to pair with the Wireless Commissioning Converter. You can pair with more than one Wireless Commissioning Converter, but you can only connect to one converter at a time.


This document assumes that you have already installed the CCT software on your computer.

The BTCVT Wireless Commissioning Converter used during this procedure should be the one that you intend to use when uploading and downloading controllers. Please note that when using the BTCVT, newer field controller models, including those with a release of *Metasys* 9.0 or later, will not work with the **Transfer to Device (Download)** feature in CCT.

CCT supports the Windows® 10, 8.1, Windows 8, and Windows 7 operating systems. Windows XP® is no longer supported for CCT software at Release 10.1.

 **Note:** You cannot commission your CCT for Bluetooth communication if it is running a server-class operating system, such as Windows Server® 2008 or Windows Server 2012.

To complete all of the procedures in this document, you must have a Wireless Commissioning Converter connected to a powered-on field controller (refer to the *Wireless Commissioning Converter Installation Instructions [Part No. 24-10108-2]*).

 **Note:** The Wireless Commissioning Converter can be used in conjunction with the ZFR1800 Series Wireless Field Bus System; however, the wireless technologies of the Wireless Commissioning Converter and the ZFR1800 Series System do not directly interact. When the Wireless Commissioning Converter is connected on the hard-wired portion of a Field Controller (FC) Bus, it can be used to commission and communicate with any field controller, whether it is hardwired to the FC Bus or wirelessly enabled through the ZFR1800 Series Wireless Field Bus System. When the Wireless Commissioning Converter is connected directly to a wirelessly enabled field controller, it commissions and communicates with only that controller.

Bluetooth Wireless Technology Modules and Adapters

Bluetooth allows the CCT software to connect the Wireless Commissioning Converter for uploading and downloading field controller applications.

The computer that is running CCT must have Bluetooth wireless capabilities to communicate with the Wireless Commissioning Converter. We recommend that you do not install an external Bluetooth wireless adapter if Bluetooth technology is already built in.

You can commission the following types of laptop computers to communicate with the Wireless Commissioning Converter:

- a laptop computer with an internal Bluetooth wireless module
- a laptop or desktop computer with a Bluetooth wireless USB adapter

If you do not have Bluetooth technology built in to your computer and you must install a Bluetooth wireless USB adapter, see [Installing the Bluetooth Wireless USB Adapter](#) for directions. After the

Bluetooth wireless adapter is installed and configured, you do not need to configure it again until software or hardware configurations change.

Bluetooth Quick Start Guide

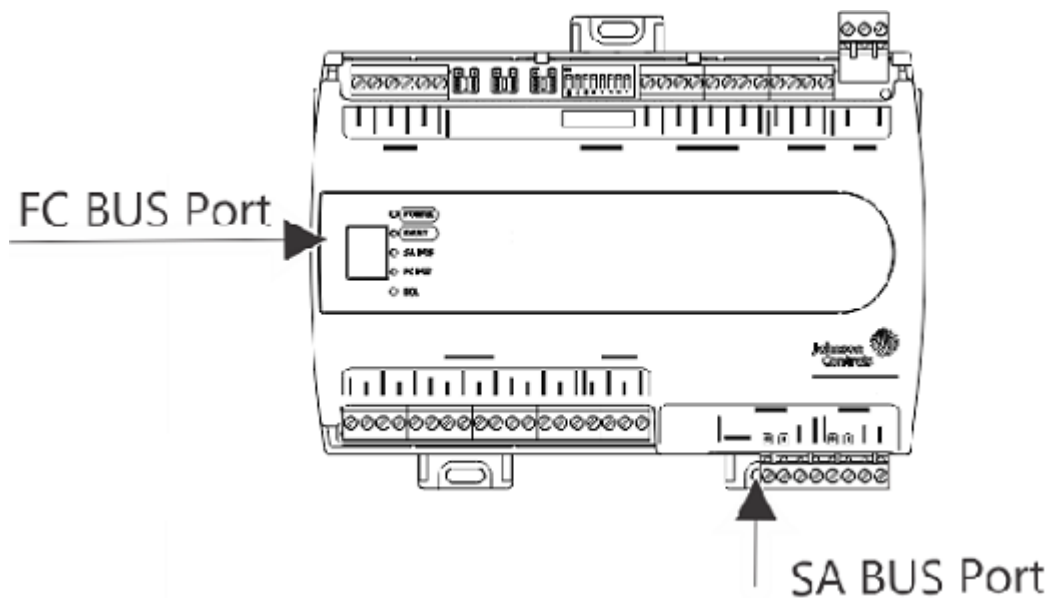
This quick start guide leads you through the Bluetooth device setup for Windows 7 and Windows 10. Your steps may vary depending on the vendor of the Bluetooth wireless device and your operating system.

You must repeat these steps for each Bluetooth converter you set up, as each device is assigned its own COM port.

Setting up the BTCVT Wireless Commissioning Converter

1. Plug your BTCVT Wireless Commissioning Converter into the SA BUS port or the FC BUS port on your field controller.

Figure 1: SA BUS and FC BUS Port



2. On the BTCVT, verify that the Power LED is green, and that the Fault LED is off.

Figure 2: BTCVT Wireless Commissioning Converter.




3. Verify that your computer's wireless is turned on. Typically, the internal wireless on/off button is on the side of the laptop or above the keyboard.


Bluetooth Quick Start Guide for Windows 7

To connect the BTCVT with Windows 7, follow these steps:

1. Right-click the Bluetooth icon (📶) in your system tray, and then select **Add a Device** from the pop-up menu. The **Add a device** wizard appears, and Windows searches for devices within range.
 - 📄 **Note:** If you do not see the icon in the system tray, click the **Show hidden icons** arrow in the tray, click **Customize**, and then set the Bluetooth item to **Show icons and notifications**. Click **OK** to close the window. The Bluetooth icon is added to your system tray.
2. Select your Bluetooth device and click **Next**. The **Add a device** wizard starts.
 - 📄 **Note:** Your device's 12 digit MAC address is printed on the case of the device. To identify your device in the **Add a Device** wizard, match the address on your BTCVT hardware to the address listed in the wizard.
3. When you are prompted to enter the pairing code for the device, enter **BTCVT**. Follow additional instructions as they appear, and then select **Close**.
4. Note your device's COM port number. To do this, select **Start > Control Panel > Devices and Printers**. Right-click the device, and then click **Properties**. Select the **Hardware** tab to find the COM port number.
5. Launch the CCT and select **Transfer > Transfer to Computer (Upload)**.
6. Select **Bluetooth** for the connection type, and enter the Bluetooth COM port number that you discovered in step 4. We recommend you set the Baud Rate to 38400.
 - 📄 **Note:** The CCT remembers the most recent COM port entry for future uses.
7. Click **Next**. The wizard displays the status **Connecting**, and then changes to **Connected**.


 **Note:** When `Connected` appears, the blue LED on the BTCVT device turns on and remains solid (not flashing), indicating a successful connection to the CCT. The SA/FC on the BTCVT turns on and flashes, indicating that communications to the field controller are established.

Bluetooth Quick Start Guide for Windows 10

1. Right-click the Bluetooth icon () in your system tray, and then select **Add a Device** from the pop-up menu. Alternatively, go to **Start > Settings > Devices > Bluetooth & other devices**. Confirm that Bluetooth is turned on.

2. To pair your device, click on the button **Add Bluetooth or other device**. The **Add a Device** wizard appears.

3. In the **Add a Device** wizard, click on the first option for **Bluetooth**. Click on the device to connect.

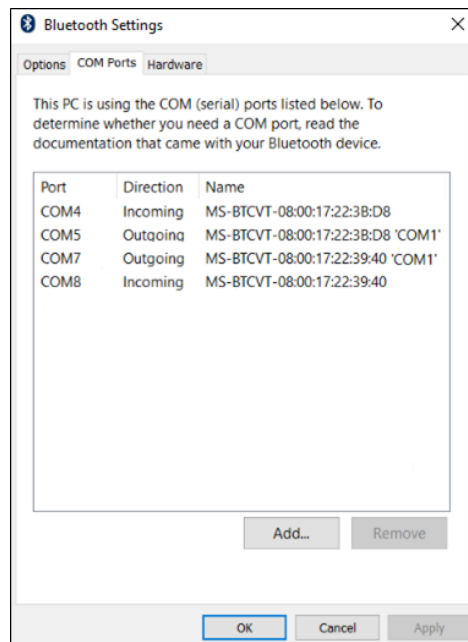
 **Note:** Your device's 12 digit MAC address is printed on the case of the device. To identify your device in the **Add a Device** wizard, match the address on your BTCVT hardware to the address listed in the wizard.

4. When you are prompted to enter the pairing code for the device, enter **BTCVT**. Follow additional instructions as they appear, and then select **Close**.

5. Under **Related Settings**, select **More Bluetooth Options** to display the **Bluetooth Settings** control panel.

6. In the **Bluetooth Settings** control panel, select the **COM Ports** tab. Two ports will be listed. The port that includes `COM1` in the name is the port number CCT requires.

Figure 3: Selecting the COM Port



7. Launch the CCT and select **Transfer > Transfer to Computer (Upload)**.

Table 1: Troubleshooting

Problem	Solution
<p>The computer does not communicate properly with the Bluetooth wireless USB adapter.</p>	<p>If you plug in the Bluetooth wireless USB adapter before the installation software prompts you to do so, the computer may install its own drivers and may not communicate properly with the Bluetooth wireless USB adapter. If this occurs, use the following recovery procedure:</p> <ol style="list-style-type: none"> 1. Unplug the Bluetooth wireless USB adapter. 2. On the Start menu, go to Run or press the Windows key + R. In the Run dialog box, type %windir%\inf. 3. Rename the BTH.inf file to BTH.bak. 4. Uninstall the Bluetooth software by using the Programs and Features option in Control Panel. 5. Restart the computer. 6. Reinstall the Bluetooth wireless USB adapter. See Installing the Bluetooth Wireless USB Adapter.
<p>On a computer already configured to use the USB Bluetooth adapter, the Found New Hardware Wizard appears when you plug the USB Bluetooth adapter into the USB port.</p>	<p>The Found New Hardware Wizard appears if you unplug an already configured USB Bluetooth wireless adapter from your computer and then plug it into a different USB port on the same computer (for example, if you move the adapter from your laptop to your docking station).</p> <p>When the Found New Hardware Wizard appears:</p> <ol style="list-style-type: none"> 1. Click Install the software automatically (Recommended), and click Next. The wizard reconfigures the computer to use the adapter on the new USB port. 2. Click Finish.
<p>When you try to connect to the BTCVT device with your laptop, this error message appears:</p> <p>The COM1 connection failed. Could not connect to remote device.</p>	<p>The Bluetooth driver for the laptop is not fully compatible with the BTCVT device. Contact your network help desk for assistance or go to the manufacturer's website to download a compatible driver. Remove the old drivers before you install the new drivers.</p>
<p>You are unable to pair or maintain pairing with your BTCVT device.</p>	

Table 1: Troubleshooting

Problem	Solution
A paired Wireless Commissioning Converter prompts you for the passcode.	The Wireless Commissioning Converter holds 20 paired device addresses in internal memory. At this time, there is no way to clear the paired device addresses, and there is no workaround. However, once you enter the passcode, as prompted, the laptop computer communicates with the Wireless Commissioning Converter. To prevent this problem, limit the number of laptops that pair with any single converter.

Detailed Procedures

Verifying the Connection between the Laptop and the Wireless Commissioning Converter

To test the connection and see the signal quality between your laptop and the Wireless Commissioning Converter before using CCT to upload or download a controller, follow these steps:




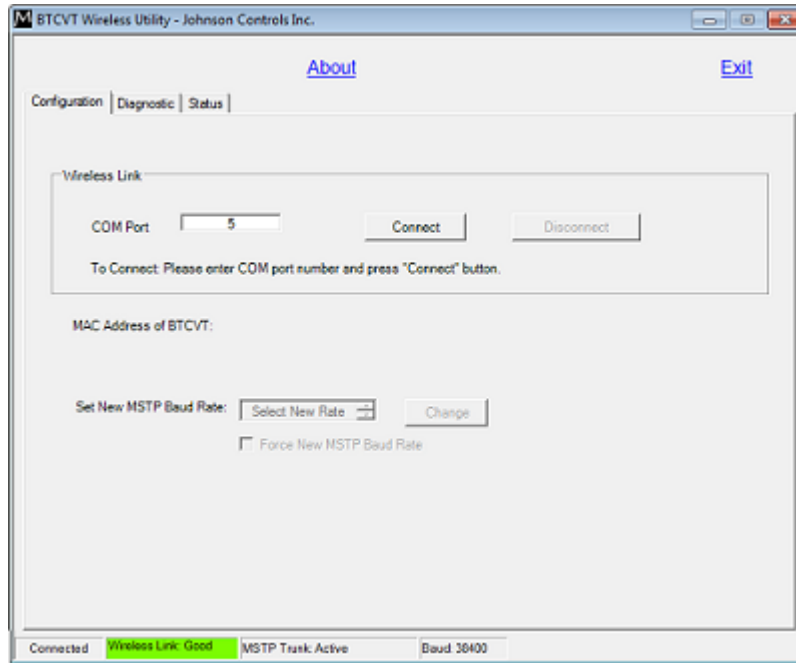
1. Go to **Program Files (x86) > Johnson Controls > CCT > bin** and double click *WirelessUtility.exe*.
2. On the **Configuration** tab, enter the COM port number assigned to your Bluetooth device, and then click **Connect**. When the connection is made, *Connected* appears in the lower-left corner of the BTCVT Wireless Utility window.
 -  **Note:** To find your COM port number, go to **Control Panel > Devices and Printers**, right click the device, then click **Properties**. Click the **Hardware** tab to find the COM port number.
 -  **Note:** Each device is assigned a different COM port.
 -  **Note:** If the Wireless Commissioning Converter determines that no valid *Metasys* application is using the connection after 60 seconds, the Converter ends the connection.

Figure 4: Entering the COM Port Number in the Configuration Tab



3. Click the **Status** tab to view the signal quality. Note your Wireless Link color and status, then compare your results to Table 2.

Figure 5: Viewing Signal Quality in the Status Tab

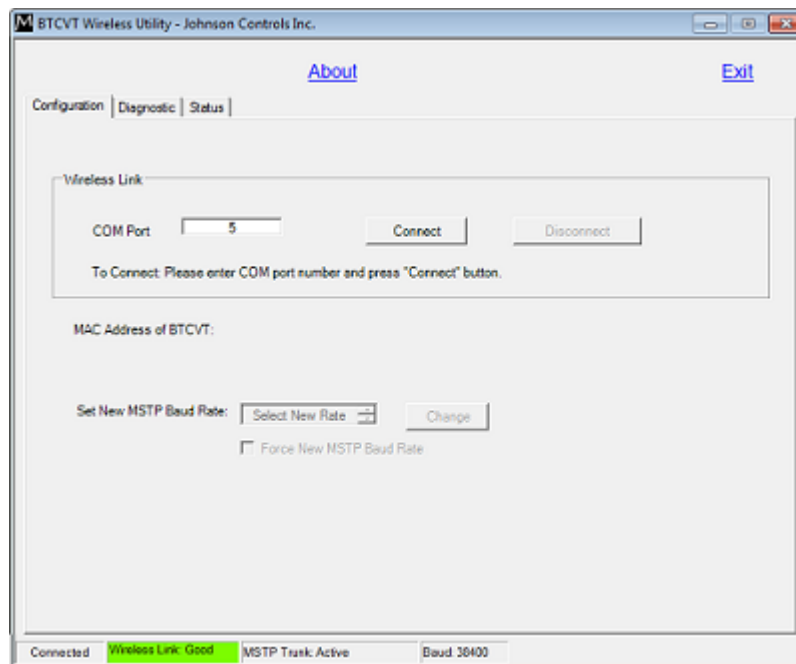






Table 2: Wireless Link Status


Color (Percent)	Status ¹	Description and Corrective Action
Green	Good	Wireless link is good and optimal for use with CCT. No corrective action required.  Note: To maintain a strong Wireless Link status, keep your computer as close to the Wireless Commissioning Converter as possible.
Yellow	Fair	Wireless link is fair and sufficient for use with CCT. No corrective action required.  Note: To improve your Wireless Link status, keep your computer as close to the Wireless Commissioning Converter as possible.
Red	Poor	Wireless link is poor and insufficient for use with Wireless Commissioning Converter. Try moving the laptop closer to the Wireless Commissioning Converter or look for sources of interference.  Note: Poor Wireless Link status indicates that the distance between your computer and the Wireless Commissioning Converter is too great or that outside wireless interference is too great.
No Bar	Disconnected	Wireless link is not established or the connection is broken. Verify settings and try to connect to the Wireless Commissioning Converter again.


¹ The Wireless Link Status is a measure of the signal strength and does not relate to the transmission speed of wireless communication.

 **Note:** To maintain good Wireless Link status, keep your computer as close to the Wireless Commissioning Converter as possible.

4. Close the BTCVT Wireless Utility before you use the CCT to upload or download a controller. We do not recommend using the BTCVT Wireless Utility while uploading or downloading.








Installing the Bluetooth Wireless USB Adapter

 **Note:** We recommend that you do not install an external Bluetooth wireless adapter if Bluetooth is built in to your computer. See [Setting up the BTCVT Wireless Commissioning Converter](#) if Bluetooth is built in.

 **Note:** The instructions to install the USB adapter may vary depending on the vendor of the USB Adapter. Before installing the USB adapter, familiarize yourself with the vendor's installation instructions.

 **Important:** Do not plug in the USB adapter until prompted to do so. If you plug in the USB adapter before prompted, see the [Troubleshooting](#) section.

1. Close all programs and insert the USB adapter installation media. The installation program appears.

-  **Note:** If the installation does not start automatically, on the Start menu, go to **Run** or press the Windows key + R. In the field that appears, enter the vendor setup program, for example *D:\setup.exe* (where D is the letter of your CD-ROM or DVD drive).
2. Click **Install Bluetooth Driver**. The installation begins and the welcome screen appears.
 3. Click **Next**. The **License Agreement** screen appears.
 4. To accept the terms of the license agreement, click **I accept the terms in the license agreement** and click **Next**. The **Destination Folder** screen appears.
 5. Click **Next**. The **Ready to Install the Program** screen appears.
 6. Click **Install**. The program installs.
-  **Note:** During the installation process, you may see a **Driver Signature Notice** dialog box saying no certification program is in place for Bluetooth devices. If this appears, click **OK**.
7. When the **Bluetooth device not found** dialog box appears, click **Cancel**.
-  **Note:** You may also be prompted to plug in your USB hardware, which starts the **Found New Hardware** Wizard. Wait until the **Windows Found New Hardware** Wizard is complete before clicking **OK**. If you are not prompted to plug in the USB hardware, wait until the driver installation is complete before you plug in the USB hardware.
-  **Note:** Depending on the adapter you install, you may be prompted to enter a security code. If so, click **No** and follow the directions on the screen to enter the code manually. The code is labeled **SK** and is printed on the back of the Bluetooth wireless adapter.
8. After the software has been successfully installed, click **Finish** to close the final window. A red Bluetooth icon appears on the system tray.
 9. Plug in the USB adapter. The **Found New Hardware Wizard** appears.
-  **Note:** Your computer may install the driver automatically without the **Found New Hardware** Wizard. If it does, restart the computer (if prompted) and go to [Setting up the BTCVT Wireless Commissioning Converter](#).
10. Click **Install from a list or a specific location** and click **Next**. The **Please choose your search and installation options** screen appears.
 11. Click **Search for the best driver in these locations** and click **Next**. The **Completing the New Found Hardware** Wizard screen appears.
 12. Click **Finish**, and look for the Bluetooth icon on the system tray () . Alternatively, check to see if Bluetooth has been enabled by going to **Device Manager** in **Control Panel**. Expand the Bluetooth section and confirm that the device is paired.
 13. Ensure that your Bluetooth device is connected to your computer (plug it in if not already prompted) and restart your computer.
 14. After restarting your computer, wait until you see the Bluetooth icon () in your system tray or check **Device Manager** in **Control Panel** to confirm that the device has been successfully paired.

15. See [Setting up the BTCVT Wireless Commissioning Converter](#) to set up your device.

Related Documentation

Table 3 provides a list of documents related to the CCT and the Wireless Commissioning Converter.

Table 3: CCT and Wireless Commissioning Converter Documentation

For Information On	See Document	LIT or Part Number
Installing the CCT Software	<i>CCT Installation Instructions</i>	<i>LIT-12011529</i>
Connecting the Wireless Commissioning Converter to Hardware; Wireless Commissioning Converter Specifications	<i>Wireless Commissioning Converter Installation Instructions</i>	<i>Part No. 24-10108-2</i>
Using or Configuring Controller Applications in the CCT	<i>Controller Tool Help</i>	<i>LIT-12011147¹</i>

¹ This LIT number represents a printer-friendly version of the *Help*.

